(3) Whether the vessel continues to be reasonably fit for its intended service and route.

(h) This OCMI may require further information necessary for the determinations required by this section. He or she will inform the owner or operator of the vessel in writing of these determinations.

(i) If this OCMI, in compliance with paragraph (g) of this section, does not accept the alternative midperiod examination instead of the reinspection required by §126.510 of this subpart, he or she will require reinspection of the vessel as soon as practicable. He or she will inform the owner or operator of the vessel in writing that the examination is not acceptable and that a reinspection is necessary. The owner, master, or operator shall make the vessel available for the reinspection at a time and place agreeable to this OCMI.

PART 127—CONSTRUCTION AND ARRANGEMENTS

Subpart A—Plan Approval

Sec.

Subpart B—Particular Construction and Arrangements

Subpart C—Rails and Guards

Subpart D—Construction of Windows, Visibility, and Operability of Coverings

AUTHORITY: 46 U.S.C. 3306; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49328, Sept. 19, 1997, unless otherwise noted.

Subpart A—Plan Approval

§127.100 General.

Plans listed by §127.110 of this subpart must be submitted for approval after the owner or builder applies for inspection in compliance with §126.320 of this subchapter.

§127.110 Plans and specifications required for new construction.

Each applicant for approval of plans and for an original Certificate of Inspection shall submit three copies of the following:

(a) *General.* (1) Specifications (information only).

(2) General Arrangement Plans.

(3) Safety Plan (Fire-Control Plan), for OCMI review and approval.

(b) *Hull structure.* (1) Midship Section.

(2) Booklet of Scantling Plans.

(c) *Subdivision and stability.* [For plans required for subdivision and stability, see subchapter S of this chapter.]

(d) *Marine engineering.* (1) Piping diagrams of each Class I systems.

(2) Piping diagrams of the following Class II systems (the builder's certification of Class II non-vital piping systems must accompany the piping diagrams in compliance with §128.220(c) of this subchapter):

(i) Systems for fill, transfer, and service of fuel oil.

(ii) Fire-main and fixed gaseous fire-extinguishing systems.

(iii) Bilge systems.

(iv) Ballast systems.

(v) Fluid-driven power and control systems.

(vi) Through-hull penetrations and shell connections.

(vii) Sanitary systems.

(viii) Vents, sounding tubes, and overflows.

(ix) Compressed-air systems.

(3) Steering and steering-control systems.

(4) Propulsion and propulsion-control systems.

(5) Piping diagrams of each system containing any flammable, combustible, or hazardous liquid including—

(i) Cargo-oil systems;

(ii) Systems for combustible drilling-fluid (such as oil-based liquid mud); and

(iii) Cargo-transfer systems for fixed independent or portable tanks.

(e) *Electrical engineering.* (1) For each vessel of less than 100 gross tons, the following plans must be submitted:

(i) Arrangement of electrical equipment (plan and profile) with equipment identified as necessary to show compliance with this subchapter.

(ii) Electrical one-line diagram that includes wire types and sizes, overcurrent-device rating and setting, and type of electrical-equipment enclosure (drip-proof, watertight, or the like).

(iii) Switchboard plans required by paragraphs (e) and (f) of §110.25–1 of this chapter.

(2) For each vessel of 100 or more gross tons, the plans required by §110.25 of this chapter must be submitted.

(f) *Automation.* For each vessel of 100 or more gross tons, where automated systems are provided to replace specific personnel in the control and observation of the propulsion systems and machinery spaces, or to reduce the level of crew associated with the engine department, the following plans must be submitted:

(1) Plans necessary to demonstrate compliance with subpart D of part 130 of this subchapter.

(2) Automation-test procedure.

(3) Operations manual.

§127.120 Procedure for submittal of plans.

If a vessel is to be constructed, altered, or repaired, the plans, information, and calculations required by this part must be submitted to—

(a) The OCMI in the zone where the vessel is to be constructed, altered, or repaired; or

(b) The Commanding Officer, Marine Safety Center, 400 Seventh Street SW., Washington, DC 20590–0001.

Subpart B—Particular Construction and Arrangements

§127.210 Structural standards.

(a) Except as provided by paragraphs (b) and (c) of this section, compliance with the construction and structural rules established by the American Bureau of Shipping and incorporated by reference in §125.180 is acceptable for the design and construction of an OSV.

(b) The current standards of other recognized classification societies, or any other established current standard, may also be used upon approval by the Commandant (G–MSE).

(c) If no established current standard for design is used, detailed design calculations must be submitted with the plans required by §127.110 of this part.

(d) The plans required by §127.110 of this part should specify their standard for design.

§127.220 General fire protection.

(a) Each vessel must be designed and constructed to minimize fire hazards, as far as reasonable and practicable.

(b) Exhausts of internal-combustion engines, galley uptakes, and similar sources of ignition must be kept clear of and insulated from woodwork and other combustible matter.

(c) Paint lockers and similar compartments must be constructed of steel or be wholly lined with steel.

(d) Except as provided by paragraph (e) of this section, when a compartment containing the emergency source of electric power, or vital components of that source, adjoins a space containing either the ship's service generators or machinery necessary for the operation of the ship's service generators, each common bulkhead and deck must be of ''A–60'' Class construction as defined by §72.05–10 of this chapter.

(e) The ''A–60'' Class construction required by paragraph (d) of this section is unnecessary if the emergency source of electric power is in a ventilated battery locker that—

(1) Is located above the main deck;

(2) Is located in the open; and

(3) Has no boundaries contiguous with other decks or bulkheads.

§127.230 Subdivision and stability.

Each vessel must meet the applicable requirements in subchapter S of this chapter.

§127.240 Means of escape.

(a) Except as provided by paragraphs (l) and (m) of this section, there must

be at least two means of escape, exclusive of windows and portholes, from each of the following spaces:

(1) Each space accessible to offshore workers.

(2) Crew accommodations and each space where the crew may normally be employed.

(b) At least one of the two means of escape must—

(1) Be independent of watertight doors in bulkheads required by part 174 of this chapter to be watertight; and

(2) Lead as directly to the open deck as practicable.

(c) The two means of escape required by paragraph (a) of this section must be widely separated and, if possible, at opposite ends or sides of the space, to minimize the possibility that one incident will block both escapes.

(d) Except as provided by paragraph (e) of this section, a vertical ladder ending at a deck scuttle may not be either of the means of escape required by paragraph (a) of this section.

(e) A vertical ladder ending at a deck scuttle may be the second means of escape if the—

(1) Primary means of escape is a stairway or passageway;

(2) Installation of another stairway or passageway is impracticable;

(3) Scuttle is located where stowed deck cargo could not interfere;

(4) Scuttle is fitted with a quick-acting release, and with a hold-back device to hold it open; and

(5) Scuttle meets the requirements for location, strength, and height of coaming in subchapter E of this chapter.

(f) Each vertical ladder must—

(1) Have rungs that are—

(i) At least 410 millimeters (16 inches) long;

(ii) At most 300 millimeters (12 inches) apart, uniform for the length of the ladder; and

(iii) At least 180 millimeters (7 inches) from the nearest permanent object in back of the ladder;

(2) Have at least 115 millimeters (4½ inches) of clearance above each rung;

(3) Be made of incombustible materials; and

(4) Have an angle of inclination with the horizontal, greater than 70 degrees but not more than 90 degrees.

(g) No means may be provided for locking any interior door giving access to either of the two required means of escape, except that a crash door or locking-device, capable of being easily forced in an emergency, may be employed if a permanent and conspicuous notice to this effect is attached to both sides of the door. A means may be provided for locking an exterior door to a deckhouse if the door is—

(1) Locked only by a key under the control of one of the OSV's officers; and

(2) Always operable from the inside.

(h) Each passageway or stairway must be wide enough to provide an effective means of escape for the number of persons having access to it even if each person is wearing a lifejacket. There must be no protrusions in the means of escape that could cause injury, ensnare clothing, or damage lifejackets.

(i) No interior stairway, other than within the machinery spaces or cargo holds, may be less than 710 millimeters (28 inches) wide. The angle of inclination of each stairway with the horizontal must not exceed 50 degrees.

(j) No dead-end passageway, or equivalent, may be more than 13.1 meters (40 feet) in length.

(k) Vertical access must be provided between the various weather decks by means of vertical or permanently inclined ladders. The angles of inclination of the inclined ladders with the horizontal must not exceed 70 degrees, except that vertical ladders may be used for access to pilot-house tops and other house tops used only for weather protection.

(l) Only one means of escape need be provided from each of the spaces stipulated in paragraph (a) of this section, provided the maximum area of each space is less than 28 square meters (300 square feet) and the maximum dimension (length, breadth, or depth) of each space is less than 6 meters (20 feet).

(m) Alternative means of escape from spaces may be provided if acceptable to the cognizant OCMI.

§ 127.250 Ventilation for enclosed spaces.

(a) Each enclosed space within the vessel must be properly vented or ventilated. Means must be provided for closing each vent and ventilator.

(b) Means must be provided for stopping each fan in a ventilation system serving machinery and cargo spaces and for closing, in case of fire, each doorway, ventilator, and annular space around funnels and other openings into such spaces.

§ 127.260 Ventilation for accommodations.

(a) Each accommodation space must be adequately ventilated in a manner suitable for the purpose of the space.

(b) Each vessel of 100 or more gross tons must be provided with a mechanical ventilation system unless the cognizant OCMI is satisfied that a natural system, such as opening windows, portholes, or doors, will accomplish adequate ventilation in ordinary weather.

§ 127.270 Location of accommodations and pilothouse.

(a) Neither quarters for crew members or offshore workers nor the pilothouse may be located forward of the collision bulkhead required by §174.190 of this chapter.

(b) Except as provided in paragraph (c) of this section, no part of any deck with accommodations for crew members or offshore workers may be below the deepest load waterline.

(c) Any deck with accommodations for crew members or offshore workers may be below the deepest load waterline if—

(1) The vessel complies with the damage-stability requirements in §174.205 of this chapter; and

(2) The deck head of the space is not below the deepest load waterline.

(d) No hawse pipe or chain pipe may pass through accommodations for crew members or offshore workers.

(e) There must be no direct access, except through solid, close-fitted doors or hatches, between accommodations and chain lockers, cargo spaces, or machinery spaces.

(f) No sounding tubes, or vents from fuel-oil or cargo-oil tanks may open into accommodations for crew members or offshore workers, except that sounding tubes may open into passageways.

(g) No access openings from fuel-oil or cargo-oil tanks may open into quarters for crew members or offshore workers.

(h) Quarters for crew members must be separate from and independent of those for offshore workers unless the cognizant OCMI approves an alternative arrangement.

§ 127.280 Construction and arrangement of quarters for crew members and accommodations for offshore workers.

(a) The following requirements apply to quarters for crew members on each vessel of 100 or more gross tons:

(1) Quarters for crew members must be divided into staterooms none of which berths more than four members.

(2) Each stateroom for use by crew members must—

(i) Have clear headroom of at least 1.9 meters (6 feet, 3 inches); and

(ii) Contain at least 2.8 square meters (30 square feet) of deck and at least 6 cubic meters (210 cubic feet) of space for each member accommodated. The presence in a stateroom of equipment for use by the occupants does not diminish the area or volume of the room.

(3) There must be at least one toilet, one washbasin, and one shower or bathtub for every eight or fewer crew members who do not occupy a stateroom to which a private or a semiprivate facility is attached.

(b) The following requirements apply to accommodations for offshore workers on each vessel of 100 or more gross tons:

(1) Each offshore worker aboard must be provided with adequate fixed seating. The width of each seat should be at least 460 millimeters (18 inches). The spacing of fixed seating must be sufficient to allow ready escape in case of fire or other emergency. The following are minimal requirements:

(i) Aisles 4.6 meters (15 feet) in length or less must not be less than 610 millimeters (24 inches) wide.

(ii) Aisles more than 4.6 meters (15 feet) in length must not be less than 760 millimeters (30 inches) wide.

(iii) Where the seating is in rows, the distance from seat front to seat front

must not be less than 760 millimeters (30 inches).

(2) If the intended operation of a vessel is to carry offshore workers aboard for more than 24 hours, quarters for them must be provided. Each stateroom for use by them must—

(i) Berth no more than six workers;

(ii) Have clear headroom of at least 1.9 meters (6 feet, 3 inches); and

(iii) Contain at least 1.9 square meters (20 square feet) of deck and at least 4 cubic meters (140 cubic feet) of space for each worker accommodated. The presence in a stateroom of equipment for use by the occupants does not diminish the area or volume of the room.

(3) Toilets and washbasins for use by offshore workers must meet the requirements of paragraph (a)(3) of this section.

(c) Each crew member and offshore worker aboard a vessel of less than 100 gross tons must be provided with accommodations of adequate size and construction, and with equipment for his or her protection and convenience suitable to the size, facilities, and service of the vessel.

(d) For each vessel of 100 or more gross tons, the bulkheads and decks separating accommodations for crew members and offshore workers from machinery spaces must be of ''A'' Class construction as defined by §92.07–5 of this chapter.

(e) After reviewing the arrangement drawings required by §127.110 of this part, the cognizant OCMI will determine, and record on the vessel's Certificate of Inspection, the number of offshore workers that the vessel may carry.

Subpart C—Rails and Guards

§127.310 Where rails required.

(a) Each vessel must have permanently installed efficient guard rails or bulwarks on decks and bridges. Each rail or bulwark must stand at least 1 meter (39½ inches) from the deck except that, where this height would interfere with the normal operation of the vessel, the cognizant OCMI may approve a lesser height.

(b) At exposed peripheries of the freeboard and superstructure decks, each rail must consist of at least three courses, including the top. The opening below the lowest course must be no more than 230 millimeters (9 inches) with courses no more than 380 millimeters (15 inches) apart. On other decks and bridges each rail must consist of at least two courses, including the top, approximately evenly spaced.

(c) If satisfied that the installation of any rail of the required height would be impracticable, the cognizant OCMI may accept hand grabs or a rail of a lesser height in its place.

§127.320 Storm rails.

Suitable storm rails must be installed in each passageway and at the deckhouse sides, including in way of inclined ladders, where persons aboard have normal access. They must be installed on both sides of passageways which are more than 1.8 meters (6 feet) wide.

§127.330 Guards in dangerous places.

Suitable hand covers, guards, or rails must be installed on each exposed and dangerous place, such as gears of rotating machinery, and hot surfaces.

Subpart D—Construction of Windows, Visibility, and Operability of Coverings

§127.410 Safety-glazing materials.

Glass and other glazing material used in windows must be material that will not break into dangerous fragments if fractured.

§127.420 Strength.

Each window or porthole, and its means of attachment to the hull or the deckhouse, must be capable of withstanding the maximum expected load from wind and waves, due to its location on the vessel's and the authorized route of the vessel.

§127.430 Visibility from pilothouse.

(a) Windows and other openings at the pilothouse must be of sufficient size and properly located to provide adequate view for safe operation in any condition.

(b) Glass or other glazing material used in windows at the pilothouse must

have a light transmission of at least 70 percent according to Test 2 of ANSI Z26.1, ''Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways,'' and must comply with Test 15 of ANSI Z26.1 for Class I Optical Deviation.

§ 127.440 Operability of window coverings.

Any covering or protection placed over a window or porthole that could be used as a means of escape must be able to be readily removed or opened. It must be possible to open or remove the covering or protection without anyone's having to go onto a weather deck. It may be necessary to break the glass of a window or porthole before removing or opening the covering or protection.

PART 128—MARINE ENGINEERING: EQUIPMENT AND SYSTEMS

Subpart A—General

Sec.

Subpart B—Materials and Pressure Design

Subpart C—Main and Auxiliary Machinery

Subpart D—Design Requirements for Specific Systems

AUTHORITY: 46 U.S.C. 3306; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49331, Sept. 19, 1997, unless otherwise noted.

Subpart A—General

§ 128.110 Equipment and systems.

(a) Except as provided by this part, the design, installation, testing, and inspection of materials, machinery, pressure vessels, and piping must comply with subchapter F of this chapter.

(b) This part contains requirements for equipment and systems commonly found on an OSV. If additional or unique systems, such as for low-temperature cargoes, are to be installed, they too must comply with subchapter F of this chapter.

§ 128.120 Plan approval.

The plans required by subchapter F of this chapter need not be submitted if the plans required by § 127.110(d) of this subchapter have been.

§ 128.130 Vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this subchapter, the following are vital systems:

(1) Systems for fill, transfer, and service of fuel oil.

(2) Fire-main systems.

(3) Fixed gaseous fire-extinguishing systems.

(4) Bilge systems.

(5) Ballast systems.

(6) Steering systems and steering-control systems.

(7) Propulsion systems and their necessary auxiliaries and control systems.

(8) Systems for transfer and control of cargo, for integral tanks or fixed independent tanks, in compliance with § 125.110 of this subchapter.

(9) Ship's service and emergency electrical-generation systems and their auxiliaries vital to the vessel's survivability and safety.

(10) Any other marine-engineering system identified by the cognizant OCMI as crucial to the survival of the vessel or to the protection of the personnel aboard.

(b) For the purpose of this subchapter, a system not identified by paragraph (a) of this section is a non-vital system.